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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,547	09/03/2004	Susumu Kayama	Q68919	1319
23373	7590	07/21/2006		
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER VANOY, TIMOTHY C	
			ART UNIT 1754	PAPER NUMBER

DATE MAILED: 07/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/506,547

Applicant(s)

KAYAMA ET AL.

Examiner

Timothy C. Vanoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-22 and 24 is/are allowed.
- 6) ☒ Claim(s) 1-17 and 28-36 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 7, 9-11, 13-15, 17, 18, 23 and 25-34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>03 Sept. 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The literature reference by "M. SEINO" has not been considered because the citation has been noted by the applicants to be in error. The literature reference with the corrected citation by "M. KIYONO" has been considered in lieu of this reference.

Claim Objections

a) Claims 4, 5, 7, 9-11, 13-15, 17, 18, 23, 25-34 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim can not depend on another multiple dependent claim. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-17, 28-31, 33, 35 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent 5,698,177 to Pratsinis et al.

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Col. 3 Ins. 35-60 in U. S. Patent 5,698,177 describes a method for making titanium dioxide by:

mixing together titanium tetrachloride and oxygen gas in reaction area;

externally heating the mixture in the reaction area at a temperature that may range from 1100 to 1500 °K (i. e. 827 to 1227 °C) and for a residence time that may range from 0.075 to 0.1 seconds: please also see col. 7 Ins. 49-52; and

collecting the titanium dioxide.

Col. 3 Ins. 46-50 reports that the reaction may be conducted in the presence of an inert gas in the reaction area.

Col. 6 Ins. 63 et seq. reports that the reaction may be conducted in the presence of water vapor.

Col. 8 Ins. 1-4 reports that the procedure allows for the formation of titanium dioxide particles having a high surface area and a low rutile (high anatase) content.

Col. 9 In, 64 to col. 10 In. 6 reports that the titanium dioxide may be used as a photocatalyst, and col. 1 Ins. 31-33 reports that titanium dioxide is extensively used in semiconductors.

Note that the feed gases will inherently be “preheated” as they approach the hot burner flame.

Claims 11, 13, 14, 17 and 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent 2,240,343 to Muskat.

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Example I in U. S. Patent 2,240,343 describes a method for making titanium dioxide by feeding oxygen gas, nitrogen gas and titanium tetrachloride in proportion so that there is 3.3 moles of oxygen per 1 mole of titanium tetrachloride into a reaction chamber kept at a temperature of 1800 °F (982 °C) so that the oxygen gas oxidizes the titanium tetrachloride into titanium dioxide particles.

Note that the feed gases will inherently be “preheated” as they approach the hot reaction chamber.

Claims 31-34 are rejected under 35 U.S.C. 102(b) as being anticipated by the applicants' admission set forth in the “Background” portion of their specification on pg. 1 In. 30 to 2 In. 8 in the applicants' specification.

The applicants already admit in the “Background” portion of their specification that particulate titanium oxide has been widely employed as an additive for silicone rubber; a dielectric raw material; a material for photocatalysts and also as a material for solar cells.

The limitations set forth in claims 31-34 drawn to the method by which the titanium dioxide was made are noted, but the claims are anticipated because the titanium dioxide appears to be the same as that described in the “Background” portion of the applicants' specification: please note the discussion of the *In re Fessman* 489 F.2d 742, 744 180 USPQ 324, 326 (CCPA 1974) court decision and the discussion of the *In re Marosi* 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983) court decision set forth in section 2113 in the MPEP 8th Ed, Rev. 3, Aug. 2005.

Claims 18-27 have not been rejected under either 35USC102 or 35USC103 because neither U. S. Patent 2,240,343 or U. S. Patent 5,698,177 teach or suggest the dehalogenation of the titanium oxide product.

The following references are made of record:

- U. S. Patent 2,367,118 disclosing a method for making titanium dioxide;
- U. S. Patent 2,462,978 disclosing titanium dioxide manufacture, and
- U. S. Patent 6,906,001 B1 disclosing a photocatalytic composition.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy C. Vanoy whose telephone number is 571-272-8158. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Timothy C Vanoy
Timothy C Vanoy
Primary Examiner
Art Unit 1754

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